The Journal

OF THE

Jamaica Agricultural Society.

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BOARD OF MANAGEMENT.

THE usual monthly meeting of the Board of Management of the Jamaica Agricultural Society was held at the office of the Society, No. 11 North Parade, Kingston, on Thursday, 21st April, 1910, at 11.40 a.m. Present: His Lordship Bishop Collins, Hon. D. Campbell, Messrs. R. Craig, C. A. T. Fursdon, A. C. L. Martin, E. W. Muirhead, H. T. Ronaldson, Conrad Watson, and the Secretary, Jno. Barclay.

In the absence of the President and Vice-presidents, engaged in the Legislative Council with other members of the Board, Mr. Craig was voted to the chair.

Apologies for absence were received from the Archbishop, Hon. Geo. McGrath, Hon. R. P. Simmonds, and J. Shore.

The previous minutes, being printed and before the meeting, were taken as read and, with the addition of the name of the Chairman omitted, were confirmed.

The following matters arising out of the minutes were submitted :—

(a) **Railway Freights.** The Secretary said that the Railway refused to pay the refund of 6/- asked for, being the expense of the men sent by Mr. Wingate of Pepper, to Porus the second time, owing to the stallion not arriving by the train it was sent by, which broke down at Bushy Park, no notice being given to the Secretary or the men that such delay had taken place. The Railway held that they were not required to give any such notice of such detention, even of live stock. The Secretary was instructed to send on copies of the correspondence for the information of the Governor.

(2) C.S.O. letter No. 4875/3720, of date 26th March, 1910, intimating that the Railway Station at Kendal would shortly be rebuilt.

(3) C.S.O. letter No. 2792/3718, of date 23rd March, 1910, acknowledging receipt of letter No. 6853, in regard to the rates for carriage of agricultural products by the Railway, saying that His Excellency would await with interest the report of the Special Committee, which was appointed to consider the subject of the relation of the Railway to agricultural development.

(4) C.S.O. letter No. 3721/3722, of date 19th April, 1910, *re* facilities for Shows on the Railway and forwarding communications from the Director of the Railway. This was referred to the Special Railway Committee.

(5) Letter from the Hon. Director of the Railway acknowledging receipt of letter No. 6986, asking to be furnished with a list of the freight rates on corn, oats, potatoes, beans, etc., supplying these and also replying to the criticisms passed at the previous meeting. This also was referred to the Special Railway Committee, being too lengthy to read.

(6) Letter from the Secretary of the Bybrook Show enclosing correspondence *re* special trains. This was referred to the Special Railway Committee.

(b) Pound Laws. The Secretary intimated that the papers were still in circulation round the Live Stock Committee, and consideration of the matter was therefore deferred until they were returned.

(c) Exhibitions. The Secretary submitted C.S.O. letter No. 3333/4525, of date 8th April, 1910, in regard to the Exhibition to be held at Toronto, asking the Secretary to confer with Mr. Haggart as to what arrangements it might be possible to make and what they would recommend for the representation of Jamaica at the Exhibition, if the Government should be able to provide for some expenditure.

The Secretary said that after conferring with Mr. Haggart they had made an estimate of £125, which would allow for the organising of the exhibits and the personal expenses of a representative at Toronto, who could give reliable information regarding the agriculture, commerce, etc., of the Island.

Mr. Fursdon said he understood that if exhibits could not be sent on, the Board had recommended that a representative might at least be sent to give information.

The Secretary said this would depend on what the Government felt inclined to grant, but if a full representation could not be made, the Government might perhaps send a representative.

(d) Praedial Larceny. The Secretary stated that with regard to the letters submitted at last meeting from Branch Societies, asking whether the persons nominated by the Branch and authorised under Law 4 of 1909, would be supplied with some distinguishing mark, he now submitted correspondence of the Inspector General with the Colonial Secretary, which recommended that a small crown in the form of a badge could be issued, and that His Excellency had approved of this. The Board considered that this would be suitable.

With regard to the expenses of such authorised persons in attending court when they made arrests, the Secretary was instructed to inform the Government that it would simplify matters if their expenses at the rate of the ordinary witnesses' expenses were paid by order of the court without further reference to the Society.

Instructors. (a) The report of the Instructors' Committee was submitted as follows: –

The Instructors' Committee met at the office of the Society on Wednesday, 20th April, at 4.30 p.m. Present: Hon. Director of Agriculture in the chair, Hons. D. Campbell, and J. R. Williams, Messrs. R. Craig, A. C. L. Martin, and the Secretary and beg to report that they have taken steps to put in operation the arrangements for Instructors already approved by the Board of Management at the December meeting, for which provision has been made by the Legislative Council in the vote for the Society for the current year.

The Secretary has been accordingly instructed to advertise for two new Instructors, to be chosen by a Committee of Selection, one for St. Catherine, one for Hanover and Westmoreland, and an Assistant Instructor for Bath, the selection of which would be left to the Chairman.—(Sgd.) H. H. Cousins, Chairman.

The Board confirmed the arrangements.

(b) The following resolution from Sav.-la-Mar Branch was submitted: –

"It having come to the knowledge of this Society that there is not *at present any Agricultural Instructor for the Western District. be it* resolved: that the Board of Agriculture be asked to direct one of the present Instructors to proceed to Westmoreland for the purpose of giving practical demonstrations and to be available until a permanent appointment be made.—Moved by O. M. Seaton, seconded by H. Robins. Passed *nem. con.*—(Sgd.) C. P. Bovell, Chairman. 8/4/10.

The Secretary was instructed to reply that no other Instructor could be taken from his parish, but that the Board was now arranging to secure a new Instructor.

"Whereas in the opinion of this Society, nothing is being done by the parent Society to encourage and stimulate the growing of minor products generally in this important parish, and especially of cassava, potatoes, arrowroot and tobacco: be it therefore resolved, that the Jamaica Agricultural Society be requested to start a model Garden in the vicinity of Savanna-la-Mar, and that practical demonstrations be given to the peasantry and others from time to time in the scientific growing and reaping thereof.—Moved by O. M. Seaton, seconded by H. Robins, and carried *nem. con.*—(Sgd.) C. P. Bovell, Chairman. 8/4/10.

With regard to the second resolution, the Secretary was directed to say that a model garden would require very close supervision from the Instructor to be successful, and this could not be given owing to the wide field of his operations over two parishes; and at any rate the Board had no funds at present.

Affiliation. The following applications for affiliation were submitted:—(a) Bunker's Hill, Trelawny; (b) Boscabel, Oracabessa, St. Mary; (c) Windsor Castle, Pear Tree Grove, St. Mary; (d) Pedro Plains, St. Elizabeth.

Affiliation was granted to these Branches, the rules having been fulfilled.

(e) The St. Thomas Planters' Association. A discussion took place as to whether the Board could under its rules, affiliate this

complied with the rules, the Secretary was instructed meantime, to forward them a copy of the rules governing affiliated Societies.

The Secretary brought to the notice of the Board, that there was a steady increase in Branch Societies, and this involved the printing of additional JOURNALS almost every month, but that the allocation for the printing of the JOURNALS remained the same; he also asked rulings as to the sending of double JOURNALS if several persons in one family were members of a Branch, or in the case of persons being members of both the parent Society and a Branch. He was directed to submit a rule on the subject for consideration at the next meeting.

In this connection Mr. Fursdon gave notice that he would move at the next meeting, that the affiliation fee be increased to 20/. Mr. Muirhead seconded. The Secretary was instructed to bring the resolution forward at the next meeting.

The Secretary also said that as the Branch Societies steadily increased until now there were nearly seventy, it was a matter of difficulty for him to keep in touch with them all as he would like to do; at present he could only keep in touch with those who used the office most. Small settlers, who were members of Branches, were corresponding more and more with him, and asking a variety of questions and services, which he was glad to give,—they were purchasing seeds now freely, such seeds as could not be got in stores,—seed corn, varieties of peas and beans for green dressings, and so on, formerly only demanded by the larger planters; at the same time it took considerable pre-arrangement to get supplies of seeds, considerable care to keep them safely in stock over a period, and a great deal of parcelling to supply small quantities; all this work had never been calculated upon in former years; also he was being required to travel more and more, yet keep in touch with all office work and issue the JOURNAL. He thought the question of office assistance should be considered. He was directed to submit a minute of work performed in the office now, for consideration at the next meeting.

Railways. A letter from Porus Branch *re* Railway policy was submitted, which was referred to the Special Railway Committee.

Banana Disease. The Secretary submitted a letter from Nicaragua calling attention to the great havoc made amongst bananas there by banana disease, also a letter that was previously printed in the JOURNAL calling attention to the same disease in Costa Rica and Panama. He was instructed to send this information to the Governor and draw attention to the danger of the introduction of such disease here.

Shows. The Secretary drew attention to the number of Shows in one month. He attended Smithville Show on the 12th, Christiana on the 14th, and was due at Stewart Town in the following week; he could not go anyhow, owing to the illness of the clerk.

Mr. Fursdon asked if the Secretary was supposed to attend all Shows. The Secretary said he was supposed to do so.

The Secretary was directed to circularise the various Branch Societies to point out to them the desirability of not having their Shows on the same day or close together, if they required the help of any of the Society's officers or the use of the marquees and poultry coops.

Coconut Disease. The Secretary submitted letters from Mr. F. Barnet Brown, Fairy Hill, Portland, and from Mr. Wates, Instructor, giving particulars of coconut diseases in Portland not due to bud rot, and which had become very prevalent. He was directed to refer the matter to the Instructors' Committee as to whether Mr. Wates could spend some time making special investigations into coconut diseases in Portland.

Rubber. The open discussion on the rubber question was postponed till the next meeting, owing to the absence of Dr. Pringle, who brought the question up, and the Hon. Director of Agriculture, both of whom were at the Legislative Council.

Mr. Conrad Watson gave notice that at the next meeting he would ask for the details of how the £25 for the cotton experiments had been spent.

New Members. The following new members were elected:—General Seymour Faine, Haiti; T. M. Jacques, Grenada; Sebastian Spear, Mexico; and Walter Fischer, Brazil.

The meeting adjourned till 19th May, 1910, at 11.40 a.m.

COCONUT DISEASES.

The coconut diseases are assuming very serious conditions in my district. During the month of March I have been paying very particular attention to these diseases in Portland, and have been alarmed to find how seriously they are spreading.

As you know, coconuts are the main industry of the eastern part of Portland, and since the hurricane, thousands of young coconuts have been planted. It is these young trees of all ages from eighteen months to ten years that are being attacked. I am prepared to state that along the main road from Sion Hill to Hector's River, a distance of eighteen miles, there is not half a mile in which I could not point out sick coconut trees on large properties and in the smaller planters' cultivations.

On the 4th instant, I visited Ross Craig, where some thousands of young trees are planted, and found these trees dying in different parts of the property. Here we found trees from two years up to seven or eight years old were being killed out by a beetle that sets up a rot in the heart of the trees. By carefully opening up the heart leaf by leaf, it was possible to find the round hole (size of a pistol bullet) on the outer side of the outermost heart leaves or limbs. By dissecting the limb lengthwise, a regular channel or

groove was found leading up until it broke through on the inner surface of the limb, and the hole continued into the next limb with an interior groove leading up again; this continued till the heart was reached. Just before the groove reached the surface of the inner leaf to come out into the air, in some cases we found large white grubs with red heads, and in other cases large cocoons formed of the fibre of the coconut limb. These cocoons I took home and have succeeded in hatching out. I also got the grub to crystallize and hatch. I find they are a smallish beetle with a tough beak; the wings are striped with light brown and the head has two bluish dots on it. I send you a few sketches in colour of the beetle which may be useful to show others. I take it that the beetle lays its eggs in the outer limb; the grub then hatches and burrows its way upwards through the heart till it reaches near the surface; it then goes into the chrysalis stage, and finally emerges as a beetle to begin its cycle over again on some other tree. This attack on the tree seems to set up a rot which kills the tree. The important part of it is that the symptoms are those that accompany the so-called Bud Rot and Root Disease. viz.: gum oozing from the trunk, and shortened, crinkly leaves. All the trees on this property seem to be dying of this disease or rather borer. I sent the beetle, or one of them, to Mr. E. J. Wortley, but he has not yet sent me the name of it. I find in an old JOURNAL an article describing some such beetle in Ceylon, is it the same? The cause of these trees dying had been diagnosed already by Mr. Cradwick and myself as Bud Rot. This find opened my eyes, and on my visit to Darlingford (a place where there are 37,000 young trees) I found young trees attacked by the same beetle,—found the grubs, the cocoons, and hatched out the beetles. In going over Darlingford, I was able to point out in a couple of hours' work, thirteen dying trees, unknown of by the owner; these trees had not yet reached quite to the dying age. At Fairy Hill and on my own place, however, I have not been able to find any trace of the beetle borer. At Fairy Hill, a place with trees just coming into bearing (7,000 of them), I found in one walk (the oldest) fully fifty per cent. of the trees dying of what is called the Root Disease. By careful inquiry of the overseer and owner, I found that in no case had they ever seen the heart attacked before the trunk showed signs of disease. This corroborates my own experience. Moreover, I found the soil these were planted in was like my own, a stiff black dirt with a clay subsoil. This, with other trees found dying on the same soil in the same way in other places, seemed to point to the fault lying in the soil they were planted in, till at Darlingford I found one tree on pure red dirt with trash under it dying of this disease (not the beetle). This beetle of course, is quite distinct from the trunk borer, which is a little insect no bigger than a corn weevil. This latter my observation shows, nearly always to start at the ground; working gradually up the trunk and eventually penetrating the very heart, when death results. Planters here are getting seriously alarmed and are very anxious to know what to do. Most of them, and the small settlers too are depending on the future success of their

coconut trees. At the rate the diseases are spreading there is serious danger of there being few coconuts left if not taken in hand.

I am paying particular attention to this matter, and am recommending as follows :—

(1) That it is absolutely necessary in bearing coconut fields to keep the root of the tree free from husks, fallen limbs, etc. I am certain that these allowed, as generally is the custom, to collect at the roots of the trees, harbour the trunk borers, and very likely start the fungus disease of the root. This latter, by the way, I cannot find affects the roots themselves, which always appear normal and healthy in the sickest-looking trees. May it not be a fungus disease of the trunk starting under the overhanging crown of the tree covered by the mass of rubbish nearly always left round the trees?

(2) For borer of the trunk, tar, if the tree is taken early, is a sure cure.

(3) This means an at least quarterly inspection of all the trees for signs of the trunk borer, by red water.

(4) Regular spraying of the young trees with Bordeaux Mixture, say once in six months to keep off the attacks of the beetle borers at heart. I hope I have made this clear to be a separate beetle from the trunk borer. In reference to this some planters have said it is such a large expense, etc. The owner of Darlingford thought the outlay enormous. I have, however, made a thorough experiment with this, and am in a position to say that 200 gallons of Bordeaux Mixture sprayed in my walk 181 trees of a bearing age, say ten years old, at a cost of (including labour) 1d. per tree with a little bucket spray pump. Young trees, such as the beetle mostly attacks, can be sprayed for ½d. per tree. Mostly it will be worth while on a place with say 25,000 trees, expected to yield in ten years' time at least £2,500 per annum, to expend the sum of £50 per annum for ten years, especially as without any doubt by results seen here, I am certain the crop is largely increased at the bearing stage by spraying.

(5) Careful examination of trees regularly at three-month intervals for signs of the rot disease (a red gum exuding), if seen, at once excise the part, so that not a sign of the diseased tissue is left and tar the place. My experience has proved this successful, and I am now trying it on a larger scale. It positively stops the disease for a time, if altogether, remains to be proved. Unless cut clean out, the disease will return. I cannot help thinking the disease is of the nature of Canker in cocoa.

(6) The total destruction of all trees gone too far even though they still have a few nuts on, by cutting down and burning.

(7) Burning, *i.e.*, setting fire to the strainer of all trees that are unthrifty in appearance and not yet bearing. The resulting growth and improvement of these trees after recovering from the

(8) The disinfecting of every seed nut by dipping it in a bath of Bordeaux Mixture before planting.

(9) The very strictest attention to preventing pullers, pasture-billers, etc, cutting trees or sticking cutlass points into the trunks. I find that it nearly always sets up a rot and a running of red water. This only affects trees quite soft in the bark. If cut, tar the places.

Planters in this district, are getting considerably interested in fighting this disease, and I have many inquiries as to the cost of spray pumps, where to get, price of Bordeaux Mixture, etc.

I shall be glad of your help in spreading these particulars by publishing any portion of this report you think right in the JOURNAL. —LEO. A. WATES, Agricultural Instructor.

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We find the following in the *Tropical Agriculturist* (Ceylon), which seems to bear on the same subject:—

COCONUT BLEEDING DISEASE.—THE TREATMENT: CEYLON GOVERNMENT MYCOLOGIST'S ADVICE.

In the present instance the decay of the stem tissue is the direct effect of the attack of *Thielaviopsis*, as is proved by the inoculation experiments and the success of the treatment recommended. . . . The diseased parts of the coconut stem must be completely cut out. There is no difficulty in determining how much must be cut out, since the decayed tissue contrasts strongly with the healthy parts; but many people have expressed astonishment at the amount which is revealed when once the stem is cut open. Frequently a small black external patch is the only indication of an internal column of diseased tissue six feet long. If any diseased tissue is left behind, the disease will not be stopped; therefore it is usually advisable, in the case of long strands or cylinders of decay in the heart of the tree, to cut out about an inch or two of the sound tissue when the end of the strand has apparently been reached, in order to make quite certain that it does not continue as a narrow thread and then widen out again above. This is not so necessary on old trees where the disease is confined to the cortex. It is probable that in many native gardens the excision has not been thorough. The estate owner is accustomed to cut out "red beetle," and therefore adopted this treatment for the bleeding disease without much hesitation; but the native is so decidedly averse to cutting his coconut palms that the work may have been scamped in many cases. It redounds greatly to the credit of the Inspectors that they have been able to persuade the villagers to overcome their prejudice in this matter. The best instruments are an ordinary one-inch chisel and a mallet. The extent to which the treatment had been adopted may be gauged from the fact that in February, 1908, it was impossible to buy either at one of the leading shops in Colombo. In some cases the cost of a chisel was said to be beyond the means of the villagers, and these were therefore lent to them. Several patent axes and gouges were put on the market, but none of them surpassed the ordinary chisel in efficiency; usually these cut out more than was necessary, and left the cut surfaces so rough that water lodged all over them. With a chisel the cut can be trimmed off, and the lower edge of the wound cut slanting upwards, so that the rain water drains away. The excised decayed tissue must be collected and burnt at once. Otherwise the fungus develops freely on it. This advice was unfortunately omitted from the Sinhalese translation of the first circular issued. In ordinary estate practice a piece of sacking is placed at the foot of the tree, and the chips fall on this. This method saves trouble

in collecting, and secures that no pieces are left hidden among the grass. One caution is necessary when cutting out diseased tissue. On all coconut stems over twenty years old, numerous circular red spots about 5 mm. diameter are seen when the outer tissues are cut off. These occur up to a height of ten feet or more. They are not signs of disease, but merely incipient roots, and, needless to say they should not be cut out. If holes in the coconut palm, especially in young trees, are left unprotected, they soon attract "Red Beetle;" this insect rapidly destroys the tree. Moreover, the soft inner tissues of the stem soon decay when exposed to the action of sun and rain. It is, therefore, necessary to protect the tissues with as permanent a covering as possible, and for this purpose coal tar is undoubtedly the best. Tar is universally used in other countries on pruning cuts and other stem wounds, but its use in Ceylon has been discredited, chiefly through misapprehension. In the early days of "cacao canker," many people simply painted tar over the diseased spots without previously excising the infected tissue. It was pointed out to them by the then Mycologist that this practice did not remove the fungus, which flourished unchecked beneath the coating of tar; and in order to secure the abandonment of such a futile method, and at the same sime to enable planters to ascertain, whether the coolie had cut away all the diseased tissue, the use of tar was denounced rather forcibly. As a consequence, the idea has arisen that tar ought not to be used in any case; whereas it is really a most valuable means of protecting wounded surfaces, and only requires to be applied intelligently. In this respect the present treatment of the coconut stem stands on exactly the same footing as the treatment of the cacao system. There is no doubt that in some cases tar will hide bad work, but the abuse of the method is no justification for its wholesale condemnation. However, although tar may be dispensed with in treatment of cacao, it cannot in treatment of the coconut, owing to the difference in structure of the two stems. The former is able to heal wounds by the formation of new wood and bark over them; the latter has no power whatever of healing wounds, and they must therefore, be protected to prevent weathering or fresh infection. The wounds should be tarred immediately after cutting, if the attacks of "red beetle" are to be avoided. To facilitate this they should first of all be scorched or dried with a torch of rags dipped in oil. This process secures a better adhesion of the tar and at the same time burns off any fragments of the diseased tissue which may have been left. It is not necessary to char the tissues; the main object is to dry the surface. A rag wrapped for a length of about two inches round the end of a stick suffices for this, and gives a small manageable flame. The villager usually wants to use a dry coconut leaf; but this gives a large flame, which burns the surrounding healthy stem and sets up bleeding which may be mistaken for the stem disease. Kerosine is more manageable than coconut oil and is cheaper. The use of painters' lamps was recommended for drying the wounds in the case of large estates, but this has not, to my knowledge, been adopted. The tar is applied hot; this secures a penetration to a depth of about five mm. in young tissues. If the cutting has been insufficient, the tree begins to bleed afresh, the liquid emerging at the side of the old wound or through the tar. In such cases the work must be done again. In many instances small brittle globules of resin appear on the tarred surface; these have no connection with the disease, and should not be mistaken for renewed bleeding. When young trees are treated, the tarred surface frequently spilts as the tissues dry and contract; and it is then necessary to tar them a second time, preferably using cold tar. It would be a wise precaution to tar all wounds twice, with an interval of about three weeks between the applications; cold tar would adhere quite well to the dry surface on the second occasion, and would form a thicker covering than hot tar.

Up to the present this treatment has given good results. Some young trees, which were cut, but not tarred, have collapsed in a few

weeks through the attacks of red beetle; but the danger of this seems to be small in old trees. In many cases the trees had to be treated twice, but this is inevitable with coolie labour; on one estate which has 3,327 trees diseased, 352 have had to be treated a second time. Attacks of "red beetle" are, on the whole, rare, considering the number of trees which have been treated; tar appears to keep of this insect. In one instance the four-spotted coconut weevil bored through the tar and honeycombed the underlying tissues, even though these were saturated with tar oils, but the excision of all the affected tissue, together with the beetle larvæ, prevented the destruction of the tree. One planter complained that the wounds were attacked by woodpeckers, but it is most probable that beetles had obtained an entry previously. In order to prevent infection of young trees, spraying with Bordeaux Mixture was recommended. This was done on many estates, but I have not been able to obtain details of the cost of the operation. Sprayers were used in one instance, but in most cases it was found cheaper to apply the mixture with a brush. Experiments have shown that the sporers of *Thielaviopsis* do not germinate in a solution which contains more than 0.06 per cent. of copper sulphate; spraying with Bordeaux Mixture will, therefore, prevent infection, though the solution is not strong enough to kill the spores. It was pointed out in the local press that bazaar samples of copper sulphate contained about 75 per cent. of iron sulphate; Bordeaux Mixture made with this is black instead of bluish white, and is practically worthless. In most cases the amount excised in the eradication of the disease is so small that it can have no effect on the future growth of the tree. Where long wounds have been made in young trees, the supply of water and food materials from the roots is interrupted, though not to the extent it would be in dicotyledonous trees, because the wound follows the direction of the vascular bundles, and though oblique, hardly destroys more bundles than enter the base of the diseased tissue. But since the coconut is adapted for existence on a small supply of water and its vascular bundles are very numerous, it may be doubted whether this effect will be perceptible, because the extra work thrown on the remaining bundles will be small when divided among so many. It has been prophesied that the stem will become gradually thinner above the wound, but I can see no reason why this should occur under modern estate cultivation

The great danger is that the stem should be so weakened by cutting that it breaks with the wind. This is hardly likely to occur if the wound is near the base, but an estimation of its probability in other cases requires an investigation into the tensions of a coconut stem on bending—a very interesting problem, but one which cannot be entered into here. There is scarcely any bending with the wind in a coconut stem about twenty years old; after this the amount increases with the height, the lower quarter or third usually remaining immovable. The theory that the palm stem does not curve in a gale but bends from the base from a position to a position, is quite erroneous in the case of the coconut; the latter bends in a uniform curve, and the crown sways like the bob of an inverted pendulum, the motion of the stem being imperceptible in the lower quarter or third according to the height of the tree. The elongation of the stem with age alters the bending moment at any point, and therefore a wound which is not a source of weakness at first may become such as the tree grows older, quite independently of any further decay at that point. Personally I have only seen trees broken by the wind when the stem was over 60 feet high, and the disease occurred within the upper ten feet; the number of coconut palms uprooted by gales appears to be far greater than the number broken.

Holes made when cutting out "red beetle" are often filled with lime; this serves at least to prevent further beetle attacks. It has been suggested that the holes made in carrying out the present treatment should similarly be filled with cement or earth, but there does not appear to be any advantage in this practice. In all the cases which I have seen the

cement has dried into a compact mass quite free from the wood. In such a condition it cannot add anything to the strength of the tree; and the rain water which lodges behind the cement soon induces decay. It is better to slope the lower edge of the hole so that rain water will not lodge, and to leave the hole open.

Though the prescribed treatment has been adopted, there have been many suggestions that it ought to be possible to discover some more conservative treatment, *i.e.*, some method which does not involve excision of the diseased tissue. Needly to say, no hope of such a treatment has ever been held out. The idea which underlies these suggestions in every case is that it should be possible to water the roots of the tree with some solution which will eradicate the fungus without injuring the tree. Such an idea has not escaped the imagination of mycologists; but in spite of many years of experiment, the internal application of fungicides has not met with the slightest success, whether they have been applied as liquids to the roots or as liquids or solids in holes in the stem. In the present case any substance which would kill the fungus, would undoubtedly kill the tree if applied to the roots, or would locally kill it if inserted in healthy tissues. Moreover, even if it killed the fungus without damaging the healthy tissue, there would be left a mass of decayed tissue within the stem, to act as a nidus for other fungi when the fungicide had disappeared. It is impossible to convert the diseased tissue into sound tissue again, though such a claim has been recently made in Ceylon. Further, if the fungicide is inserted into the decayed portion of the stem, it can do very little harm to the fungus, for the bundles which convey liquids up the stem are here interrupted, so that it can only penetrate the wet rotting mass by diffusion; and that process is so slow that the fungicide would never overtake the advancing fungus.

Further suggestions which have been made for treatment of the bleeding disease will be considered later.—*Peradeniya Circular*, Vol. IV., No. 22.

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Knowing that your interest is in the agricultural progress of the Island, I therefore report to you the state of my coconut cultivation. I have had our Instructor, Mr. Wates, looking over my walk and advising what is best to be done and have followed all the advice given me by him and others, but to this date have not seen any real good effect on the walk. Since the beginning of last year I noticed that several of my coconut trees started to send out a red gum from the roots and in a short time the trunk of the trees also were either all over red or had red streaks all down, then the limbs began to droop and the nuts to fall off, and in less than six months the trees died. I have cut down and burnt fully one hundred trees; others I have cut away the affected part to the depth of fully four to six inches in the trunk and tarred them. when I have burnt the roots around and the strainers, but all to no effect. Mr. Wates advised the cutting away of the affected part and tarring. I am now trenching on either side of the trees to see if this will do any good and I am also having a lime kiln burnt so as to fork around the roots and lime them, and I am also recommended to spray with Bordeaux Mixture. Can you inform me where I will get the Blue Stone cheapest, and can you import or recommend me where I can get a pump? I am told a pump can be got from you to throw thirty-eight feet without a hose. Mr. Wates had one of the affected trees cut down; the trunk of the tree inside showed no sign of disease, no insects were in the heart, but the tree was dying. In some trees if a limb is cut in two, it shows large spots on either side of the cut. I do not see in the pamphlet sent out by the Department of Agriculture on the diseases of the coconut palm, any allusions to the red streaks or to the trees turning all red from the root up, so beg to bring this feature to your notice. I think I am correct in saying that nearly every property in this part of the parish is losing coconut trees. It is a-

serious matter to all of us, after waiting seven to ten years for the coconuts to come in and as they start bearing they die. Nearly all the time it is the best bearing trees that die; I have hundreds of immature coconut trees on the ground. I shall be glad for any advice you can give me.
—(Sgd.) F. BARNET BROWN.

Fairy Hill, P. M. River.

[NOTE.—Both Mr. Cradwick and Mr. Wates have investigated the different coconut diseases prevalent in Portland, and as they are on the spot they can advise better than we can do. What we can do, however, is to search coconut literature written of other countries and see if we can find any information regarding the symptoms described. We have come across something that may be useful and publish it above. Mr. Wates has also written on the subject and we publish his article too.

When the diseases of coconuts is not Bud Rot, which has been found to be of bacterial origin, and may come from the outside, we always say—"Look to the roots and the soil,—see that the conditions the coconut trees are living in are suitable. Look to the sanitary conditions, as it were. Leave no coconut trash between the trees, gather in heaps and burn between the trees, or better still, bury and lime. See that there is sufficient drainage, not simply little gutters to carry off the rainfall, but cross trenches; breaking the top crust of the soil, and liming will be good." Spray pumps can be had from our hardware advertisers, and also the Blue Stone.—ED.]

PRIZE HOLDINGS COMPETITION.

IN company with Mr. H. Q. Levy, we were engaged from January 24th to 31st, and from February 1st to 4th, in judging the holdings entered for the Prize Holdings Competition for the Parish of Trelawny, for the year 1909-1910, and we beg to submit our report as follows:—

Number of entries.—There were forty holdings entered, thirty-seven were actually judged, three for various reasons withdrawing. They were mostly in the same districts as in the previous Competition; twenty-one were new competitors, the balance had competed before. Four regular prizes and one extra prize were won by new competitors. The average number of marks is lower than in the last Competition; this is accounted for by the fact that since the previous Competition, the scale of marks has been reduced by about twenty-five per cent. While there was not a large number of entries, yet it was extremely gratifying to note the amount of interest they all took in the Competition.

All the competitors had made a great deal of improvement in their holdings, in fact, there was not a single holding judged that had not been to some extent cleaned up, and the majority of them were exceedingly neat and tidy. This is the third time I have taken part in the judging of the holdings in this parish, and it has been intensely interesting to note the steady and useful progress made by many of the competitors who have taken part each time. On several of the holdings there have been some new and permanent improvements made each time. In a number of cases improvements suggested during the judging in the one Competition have been carried out to meet the next, and thus a steady march of progress is noted. For instance, in the first Competition, Mr. Joseph Campbell's holding did not win a prize or in any way attract special notice, but suggestions were made as to how to improve his permanent crops, his fences, etc., and these matters received prompt attention, and in the next Competition had so far improved as to win the third prize; further improvements were then suggested, which also received attention, so that in the present Competition he obtained second prize.

There is a slight tendency on the part of some to think that to make a tremendous effort to clean up the holding and specially prepare it for

the occasion, is what is required in order to win the prize, but on the other hand, the majority follow a steady line of progress from year to year which is very satisfactory.

Banana and Coffee.—On the holdings in the *lower districts of the parish*, there is need for a great deal of attentiou to be given to the coffee and other permanent crops, as well as to the development of the banana industry. There is now a steady demand for bananas at Falmouth, which is within reasonable distance from any of the districts in this part of the parish. There is a vast amount of land throughout these districts at present yielding comparatively nothing, which with proper cultivation and the application of manure, which could be produced by the systematic penning and feeding of the stock on the lands, could be made to yield first class crops of bananas, etc. If each settler in these districts owning from one to fifty acres of land, made a systematic effort along these lines, it is quite possible to enormously increase the output of bananas and other products from these parts in a very short time. While it is satisfactory to know that large quantities of bananas are sent out weekly from the districts in *Upper Trelawny*, yet there is no reason why the output should not be very greatly increased. There are large tracts of some of the best land in the Island—good average seasons—and fair roads, which are being greatly improved, so that the possibilities of these districts are enormous.

I herewith beg to attach a schedule of the marks awarded.

In the first class a fair average number of marks was obtained. More attention should be given to the permanent crops, especially to pruning and thinning generally. In the second class the general average of marks gained is below either of those in the other classes. In this class there was a shortness of catch crops and live stock—both of which should receive much more attention on holdings of this size. In the third class the general average of marks gained was fair, although the catch crops were not equal in quantity to what one would desire. In some cases this may be accounted for by the small acreage, necessitating the cultivation of provisions elsewhere.

The Competition was an interesting and successful one, and our thanks are due to the various persons who so readily assisted in advertising the Competition, and in different ways rendering assistance during the judging. Considering that the Instructor, Mr. H. Q. Levy, only took charge of the district in July last, great credit is due to him for having so successfully worked up the Competition.—E. Arnett.

CASTILLOA AND HEVEA RUBBER.

The quality of Castilloa rubber, when properly prepared, stands very close to Para rubber. The high resin content, which previously was one of the chief objections to Castilloa rubber, can now, by improved methods of preparation, be reduced below two per cent. The tensile strength is fully equal to plantation Para. The rubber is shipped preferably in block form, and sold, under guarantee from the plantation, to be free from mechanical impurities and not to contain more than seven per cent. of moisture or three per cent. of resin. It is not tacky, and is shipped in clean, well-packed, and dust-proof cases.

A series of samples of well-prepared Castilloa rubbers from Mexico, was submitted by me to several of the leading rubber brokers in Mincing Lane on March 8th. One experienced broker classified some of the samples as Hevea sheet, and valued them at

10s. 2d. per lb. Another prominent broker, upon being told that it was Castilloa rubber, *valued it at 9s. per lb., and confessed that he* did so because it was Castilloa rubber. Otherwise it would have been worth over 10s. per lb.

I have the testimony of some of the leading rubber manufacturers *in the United States*, that the new Castilloa product can be used for all purposes where plantation Hevea is now generally used. We, in Mexico, are fully satisfied with the product, we have our market and a ready sale for all we can produce, but we would, generally speaking, prefer European capital invested in the plantations rather than American. The principal reason for this is that the former is more conservative, that in Great Britain tropical agriculture and the development of the *Tropics is a matter of long* experience, while with the Americans it is a haphazard experiment of doubtful value. Mexico feels that it has not profited by the invasion of the American rubber promoters.

One of the questions that have frequently been put to me in London in regard to Mexican Castilloa rubber plantations is, "Why do you not plant Hevea rubber?" My answer to this is, that while Hevea grows well in Mexico and yields well, as is proved by experience, we do not plant Hevea because of certain local conditions. On account of the anatomy of the Hevea tree, it is necessary to tap each tree from 100 to 150 times per annum to produce two or perhaps three pounds of rubber. *Our labour is expensive.* Where it costs 1s. 6d. to produce one pound of Hevea rubber on an Eastern plantation, it would cost fully 4s. to produce one pound of Hevea rubber in Mexico. With prevailing prices this would leave a margin for profit, but we are not sanguine enough to believe that such prices will last for ever, and it would be a very risky undertaking to plant Hevea with such expectations.

On the other hand, the anatomical structure of a Castilloa tree is such that one pound of rubber is obtained from a twelve-year-old tree per annum in four tappings, or at most five. The total cost of production of one pound dry rubber varies from 4d. to 8d., depending *on the efficiency of the management and other local conditions.* It should in no case exceed the latter figure, and where it does there is something radically wrong with the man directing the work.

Another feature of Castilloa planting differing from the Hevea industry in the East is, that where with Hevea from 100 to 200 trees are planted to each acre, there are 400 trees to the acre of Castilloa. This statement has often been doubted by rubber investors in London, who cannot conceive the difference in the nature of the two trees. It is somewhat parallel to that of orange trees and lime trees. We have in Mexico the evidence of plantations twenty to twenty-five years old, where the trees are standing at the rate of 400 to the acre, *thriving and yielding rubber abundantly.*

Taking the above points into consideration it will be seen that, acre for acre, the yield is better from Castilloa than from Hevea

There are other features in regard to the Mexican rubber industry which should be taken into consideration. It is not considered a good policy in Mexico to plant rubber alone. On account of the climatic conditions of the country, there is a season when the rubber does not provide labour for all the hands, and for this reason it is advantageous to have other crops on the estates. It is, besides, a matter of wisdom and foresight not to stake everything on one crop, however good it may be—in other words. not to put all the eggs in one basket. Most Mexican rubber plantations, therefore, have a diversity of crops, such as coffee, cacao, sugar, fibres, and others.

There is now a gradual thinning out of the poor or bad American concerns, most of which have disappeared, and with the advent of more stable and conservative capital in the industry, its ultimate success is assured. The rubber boom of eight years ago in Mexico, which did not reach the magnitude of the present boom in London, nevertheless ended as all artificial booms do, and on the ruins of great losses there is now being developed a sound industry based on conservative figures, which has already taken an important place among the agricultural industries of that country, and which will gradually increase further without any artificial inflation, offering a safe investment to the conservative man of means, but very little inducement to the promoter or mere speculator.

Besides, from these plantation sources, a great amount of rubber is obtained from the wild Castilloa trees in the tropical forests. Castilloa is indigenous to the country, and therefore its planting is based on experience and knowledge of its requirements in its native habitat. It is not the question of acclimatising a new plant introduced from a far away country, but of growing a tree in its native home. If proper attention is given to the tree it is as hardy as any other cultivated tree. That Castilloa is a comparatively hardy tree is best demonstrated by the fact that there are large areas of wild and planted trees which have been tapped hy the Indians with machettes, which really means slashing into the wood with knives 24in. long, cutting through the bark and taking out large pieces of wood. Hevea trees would suffer equally much, and even more than Castilloa under similar treatment.

I think that one reason why Castilloa is not favourably considered by people on this side, is that this rubber tree did not prove a success in the East. I have elsewhere had the opportunity to point out that the original Castilloa seeds brought to Ceylon and thence to various parts of India, came from Panama from a variety which is not a good rubber yielder. There is a great variety in this regard. Thus one form of Castilloa in British Honduras does not produce any rubber, only a resinous substance. The Mexican varieties vary greatly in production, and at least nine different forms of Castilloa are known to me in Mexico. There are, however, no special forms or varieties entirely unproductive in Mexico. On certain plantations may be found a few individual trees which don ot give latex,

but their number is not greater than one per thousand.—P. OLSON, LIFFER. PH. D., in *Tropical Life.*

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WE have before referred to the new species of Manihot rubber. Those interested in rubber here know the name Ceara rubber very well, and probably know the tree also as there are a good many specimens growing throughout the Island. Unlike the other rubbers the Manihots, which are of the same family as our cassava grow in pretty much the same soil and climate, that is, a dry climate and rather poor soil. The Manihots belong to the drier parts of the State of Bahia in Brazil. Until six years ago *Manihot glaziovii* or Ceara rubber, was the only rubber-yielding species of its genus known. Ceara rubber has not been much grown because it was found that it was difficult and expensive to tap; the yields of Manicobas are, however, infinitely superior to Ceara.

The late Mr. Robert Thomson was sent on a mission to Bahia about a year before his death, to investigate the qualities of Manicoba rubber, and he wrote an article in the JOURNAL on the subject of these new species in the JOURNAL for March, 1908, page 89. There are three new and valuable varieties of Manicobas, the one being most exploited being called Jequie Manicoba (*Manihot dich otoma*). All the varieties of Manihot have a very dry habitat, yet it has been found that although it grows well in dry regions, it does better even where there is more rain and better soil. The great value of the Manicoba rubbers, however, is that it enables those who have dry lands to participate in rubber planting successfully. The soil that *Manihot dichotoma* was found growing upon in its native habitat, was a red loam, often rather stony. This variety is not affected by the wind as it is a small tree and grows very spreading. On account of its small size it can be planted 1,000 trees to the acre: it is also easily tapped. The rubber from these trees brings as high a price as Para, and the yield of the trees is quite as much.

RUBBER.

AROUND the year 1900 we were in correspondence with men engaged in rubber growing and rubber tapping (both cultivated and wild trees) in various parts of the world, and as a result, formed the opininn that rubber of any species growing in the tropics, wet or dry, or tropical highlands, could be grown equally well in Jamaica and with quite as good results, as in Mexico, Columbia, Brazil or Ceylon, etc.

This was also the opinion of the late Robert Thomson, who had visited rubber growing regions, and was well acquainted from residence and experience, of South America and Jamaica, with the conditions governing the growth of rubber trees.

Very little interest was then taken in planting rubber in this Island. But afterwards when reports of the great success of Ceylon

plantations with Hevea rubber was known, a good many planters interested themselves in trying Castilloa and Hevea principally, with a few Fontumia. There are, however, more trees of the Castilloa growing than any other variety and those first planted, before planting was done systematically, have grown into fine trees in some places without care.

We have again, at the request of members interested in rubber growing, made inquiry in other countries with similar conditions, as to their experience in rubber growing, and now publish the information we have received :

I received your letter of the 10th instant, asking for certain rubber information from Tobago last evening. The data to hand, so far as regards results of tapping, are incomplete. I would beg to refer you to the head office in Tinidad, for further and definite information under this head, although nothing has been done on a large or systematic scale yet. Address : Director of Agriculture, Trinidad. The Castilloa tree (*C. elastica*) grows remarkably well, generally speaking, in this island, and is not hampered by either fungoid or insect pests. Of course there is the possibility as in all cultivated products, of a disease of some kind or other breaking out. *But my personal opinion is that Tobago conditions admirably suit the Castilloa.* The question of planting rubber and cacao together is one that I am entirely against, although I know of an estate here where the two are growing luxuriantly in company, but this place lies high up where plenty of *side light* gets in on account of its elevated position.—(Sgd.) W. E. BROADWAY, Curator.

Botanic Station, Tobago, March 31st, 1910.

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I have written for the April number of the *Bulletin* of this department, a short article as to my views on the rubber cultivation question in Trinidad and Tobago, and I think most of the contents of that paper will probably apply to Jamaica, or at any rate, to the portions of Jamaica having a similar climate to Trinidad and Tobago. Hevea (*braziliensis*), Castilloa (*elastica*) and Funtumia (*elastica*), grow vigorously here, even under less favourable conditions of cultivation than in the East. The chief drawback to the profitable cultivation of rubber in this country as compared with Malaya or Ceylon is the excessive cost of labour, some four times the daily pay of Ceylon and nearly three times that of Malaya. Investors would naturally prefer to grow rubber in a country where labour (the expenditure on which is some sixty per cent. or more of the cost of production) is so very much cheaper. I am at present investigating some instruments which I have designed with a view to extracting the latex of Castilloa in larger quantities and with less manual labour than the present methods. If cover plants are adopted in place of the practice of the East of clean weeding every ten or twelve days, and if means are discovered to cheapen the cost of tapping per pound, I see no reason why rubber should not prove more profitable than any of the existing agricultural industries in the West Indies, but the two provisos must be satisfied before it is proved that rubber is to pay in any proportion of the profits realised in the East. No data has been kept as to yields, costs of tapping, prices, etc., and I am now initiating a series of experiments with a view to obtaining this necessary information. Until the data is available the matter must be to some extent merely one of speculation, but the experiments already made do not show any reason to doubt that yields equal or nearly

so to Eastern averages per tree will be obtained in Trinidad and Tobago. —(Sgd.) J. B. CARUTHERS, Government Botanist, Trinidad.

Botanical Department, Port-of-Spain, Trinidad, 30th March, 1910.

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There are, as is generally stated here, several varieties of Castilloa. The Castilloa Elastica is the best rubber yielder of the species, the others are more or less hybrids, descending in the scale from the 4-16lbs. yields per tree of the C. Elastica, to the almost nil of the C. Australis. The subject of yield and physical appearance of each variety, has already been touched on by me in two previous articles. I hope, however, to send more practical proofs in the shape of a couple leaves or two pieces of bark, so that those interested in the subject may judge for themselves. Conditions suitable for the growth of C. Elastica.—We will now take one variety under consideration, viz., C. Elastica Cerv., eliminating all others as of no use to us commercially, and I will endeavour to give the results of some months of observations, as to the conditions most suitable for the growth and latex-yielding of this tree. In determining these conditions we cannot do better than visit the natural habitat of the rubber tree, and see how it is planted and grown by nature, and then follow these conditions as closely as we can. We will first take the soil and see if there is any particular composition peculiar to the growth of rubber. From my observations, Castilloa rubber will grow and yield equally well on almost any soil, from the rich alluvial of the bottom lands to the loose rocky soil of the hills, as long as it is free draining; but it absolutely refuses to thrive in wet, undrained clay land. On the other hand, it cannot have too much running water near its roots. Trees growing near streams will give great quantities of latex, other conditions being favourable. It requires a warm, humid climate, and an evenly distributed rainfall—the shorter the dry season the better is the locality adapted for rubber growing. From personal observations I have come to the conclusion that Castilloa Elastica will never give its greatest yield when grown as an orchard tree. It is essentially a forest-loving tree. Take its life history from the moment the seeds fall from the parent tree until it reaches maturity, and it will be seen that to yield its best it must have conditions only obtainable in a forest. The seeds are very thin shelled and lose their generative power quickly, and unless they fall on cool, moist soil so as to enable them to sprout quickly, they will die. The young trees are very brittle and easily broken by wind, they must therefore, have the protection of the other trees to shelter them until they are strong enough to fight for themselves. Though in forests densely shaded they take a long time to develop, and even then are inclined to be spindly, yet the yield of rubber given by these trees, is five or six times greater than the yield given by trees three times the size, growing in more open situations. The trunk and roots of the tree require to be shaded and kept very moist, for the latex cells to arrive at their full development, and for the tree to provide the maximum of latex. What use is the latex to the tree, I leave scientists to discover. What I do know is, that under the above conditions, the tree yields its best. There is a prevalent idea that the Castilloa thrives best in an open situation, where it can get plenty of light and air. That is quite right, and if it were grown for the weight of wood that condition would be best, but unfortunately it is grown for the yield of latex, and we must sacrifice even the fine appearance of the tree to procure what we want. These trees grow to a large size when planted through bananas; they soon outgrow these and get all the light and air necessary for their full development. Their trunks and roots are shaded in a measure, but not to the extent as in a forest, for this reason their yield of latex is about a fourth of the forest-growing tree,—they pay their way, however, as will be seen in my article on the yields of rubber, which were taken from trees grown through bananas. Through cocoa it is a failure, and it is not advisable to plant them together for the following reasons:—(1) It is detrimental to the yield of cocoa trees growing under it, as it takes up a lot of

nitrogen from the soil, and therefore robs the cocoa of its principal plant food. (2) As a shade tree it is worse than useless, unless planted very closely, and this would spell ruin to any cocoa field. The crown of the tree is very small, and at its best gives but little shade, and in the dry season of the year when cocoa most needs shade, the leaves of the Castilloa fall off, and the cocoa is left exposed to the strong sunlight. I have also noticed that the yield of rubber through cocoa is very poor—this might be accounted for by the lack of shade given by cocoa to the trunks and roots of the rubber. To simmer down the above observations we get the following facts in a nutshell: (1) Castilloa Elastica yields best when grown through forests, but the trees are inclined to be small. (2) Through bananas they grow and thrive well, and yield a fair amount of latex—provided the bananas are grown in a wet, humid climate. (3) Through cocoa it is a failure as far as yield of latex goes, and it is detrimental to the growth and yield of the cocoa. I should like to suggest the most practical way of planting forest lands to rubber, but I am trespassing too long on your time, so must get a move on. We now come to one of the, if not the most important, points in Castilloa rubber growing, viz., the selection of seed. Too much stress cannot be placed on the importance of getting the seeds of Castilloa Elastica Cerv. from the most responsible parties, who will guarantee that they are gathered from the best, and only the best, latex-producing trees, *i.e.*, trees that have recently yielded not less than 4lbs. dry rubber. It pays a planter to exercise this care, considering he has to wait eight to ten years before he knows if he has planted C. Elastica Cerv. or C. Australis something else. Thousands of pounds have been lost through this lack of care, with the result that Castilloa Elastica, through no fault of its own, has been condemned as a failure. Hundreds of planters are to-day sore at heart from their dire experiences, and the fiat has gone forth to the world that the man who takes up Castilloa rubber growing is only qualifying for Colney Hatch. And all this solely from the lack of experience and necessary care in the selection of seed. When the seeds arrive a further selection must be made to determine the best to be planted. This is easily done by throwing them into a vessel of water, and rejecting all those that float,—the quicker they sink, the better the seed. Rubber on the Pacific Slope. I have not sufficient data to go upon to write authoritatively on the rubber grown on the Pacific Slope, but from the information I can gather, I would say that the varieties were the same as those we have on this side. The difference in yield is directly attributed to the superior conditions prevailing on tbe Atlantic Slope. There is a distinct dry season of four or five months in the year on the Pacific side, which must be detrimental to the production of latex. Rubber in Jamaica.—That the Castilloa rubber tree can and does grow and thrive luxuriantly in Jamaica is a fact that cannot be disputed, and that it compares in size very favourably with the tree of the same species grown in this country, is another fact patent to any one who has been in a position to compare both trees. The trouble come in in the inferior yield of the Jamaican grown tree. 1st. I would attribute this inferiority to the wrong variety of seeds planted. 2nd. To the lack of knowledge of the conditions most suitable to the growth of the rubber tree, so that the maximum amount of latex can be produced by it. These conditions include suitable soil, rainfall, humidity, and last though by no means least, the proper amount of shade. There is an ideal rubber growing belt situated in the parish of Portland from Buff Bay to Manchioneal, in the hills and valleys to the south of these towns. Where can be fonnd happier conditions for rubber growing than in the Rio Grande Valley, Moore Town, Vineyard Hill, Windsor and other places in the vicinity and back to the borders, and including the mountains of St. Thomas-ye-Vale? In this belt is found the suitable soil, humidity and rainfall, and thousands of acres of virgin forests. What more is needed but experience and the capitalist to let Jamaica do her part in the rubber production of the world? Castilloa rubber growing has not been invariably a success even

in this country and Mexico, the homes of the species, but the reason is not hard to find. Companies were floated in the States and inexperienced managers sent to establish the plantations—managers who were totally ignorant of the A B C of tropical agriculture—and when it came to rubber growing they were even more at sea. Hence Castilloa of all varieties were planted, and under conditions in which no self-respecting rubber tree would even dream of producing latex. Is it any wonder then that these companies went bankrupt? A few have been fairly successful, *vide* report of some tappings on the La Zacualpa plantation in Mexico, in the March number of the JAMAICA AGRICULTURAL JOURNAL;—2lbs. 11ozs. is given as the largest yield, and 1lb. the average. Trees of four to eight years have an average of 2lbs. 8ozs., and this is considered promising. If the manager is satisfied with these yields, then surely Jamaicans should be with the yields of 2lbs. and 1½lbs. for the half year for two trees that were tapped by Mr. Wates, Travelling Instructor for Portland? Any old eight year rubber tree in Jamaica will yield more than 2lbs. 8ozs. In August, 1907, when in Jamaica, Mr. Cradwick lent me a set of tapping instruments, and I tapped three trees which were eight years old, growing at Rural Vale in Portland. I gave him the rubber to be weighed, and in his letter of the 20th August, 1907, he gave me the following weights No. 1—(spiral tapping)—2¾ozs. No. 2—(spiral tapping)—4¼ozs. No. 3—(herring bone—4¾ozs. These yields, as you will see, compare well with those of La Zacualpa—and they were only from one tapping. Surely then, Jamaica is not quite so dead in rubber producing as some would make out. The trees at Rural Vale are growing on honeycomb rock, with pockets of earth between, and are in a very exposed situation, they are from 36 inches to 40 inches circumference three feet from the ground—that was three years ago—and the tapping was done during the terrible drought of 1907. That trial was severe enough in all conscience as you will acknowledge. These trees, of which there are about fifty, have never cost a cent for care since they were planted. The sooner that nonsense about Jamaica not being able to grow rubber commercially is forgotten, the better it will be for the country. I maintain that *it will* grow rubber trees that will give good yields, provided care is taken in the selection of seeds and that these be planted in the most suitable lands.—H. G. CARVALHO.

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Replying to your favour of the 12th inst. (No. 6843), on the subject of rubber, I may say that I recollect our correspondence of some years ago. My interests are almost entirely in rubber and cacao,—as planter, proprietor, and consultant. As a private fancy, I am very keen on orchids, palms, and general garden stuff of tropical character; and I am not sure that I have not a larger collection of both orchids and palms than you have in your botanic garden at Castleton. However, I am contemplating a visit over your way some fine day, and look forward to the pleasure of a personal meeting with you upon such occasion. But to come to the point of your enquiries concerning Castilloa rubber. I have read a good deal about the varietal differences occurring in the genus Castilloa as found in the countries south of Mexico. Here, at least on the Gulf side, we do not distinguish varietal forms to any extent. All the Castilloa occurring here in a state of nature gives a fair amount of latex. Undeniably, however, there are constitutional differences in the tree, some trees producing a viscous latex while others produce a thinner fluid, resulting in a better rubber,—that is to say, a rubber containing a higher percentage of caoutchouc and a lower percentage of resinous substances. Other phenomena have been observed, as, for instance, that trees which, at six years of age, produce a fairly good merchantable rubber, having an acceptable degree of elasticity and resilience, cannot be depended upon as the outcome of any certain batch of seed, because the rubber given by other trees raised from the same has been found to be lacking in such

qualities, proving, indeed, distinctly "tacky" and breaking under a comparatively light stress. Another development manifests itself later, viz., that the six-year-old tree producing the "tacky" rubber becomes improved under subsequent tappings, until at the age of, perhaps, ten years it is yielding a rubber as good as the other tree. As far as we have got along with this problem, however, it has not seemed possible to distinguish accordingly in the selection of the seed in the first instance; and for my part, I am disposed to the belief that these differences are purely constitutional ones, inherent in the seedlings, though the plants be all raised from the seed of *one* individual. How seed selection may most advantageously be carried out in actual planting practice, in view of the period set by nature before results can be available, is, therefore, a problem essentially of *time*. No doubt, further light might be thrown upon the subject under the auspices of government experimental institutions, but in the case of the planter the time element is obviously prohibitive. The best that he can aim at is to collect his seed from trees known to be good yielders, run the seed through a sieve, rejecting under-sized ones, and plant the rest,—at least *ten* seeds to the stake; finally, upon the expiration of some months, removing all but the strongest plant. He is thus assured of, at least, initial individual vigour, and it would be natural enough to expect that on an estate so planted there would be a fair average resultant yield from the trees. I am sending you a small sample of our slab rubber, in market form, and perhaps it may interest you to know how we prepare it. The product of the tappings of each day is treated, then, in the following manner: the latex, as it is brought in from the field in the evening, is all mixed together, to insure uniformity; passed through a strainer of fine wire mesh, to free it from mechanical impurities, such as chips, bits of bark, lichen, etc.,—about ten per cent. of water being added, if it should be too thick to run easily. The latex so strained is next placed in wooden tanks, or barrels, avoiding all contact with metals of any kind. To fifty gallons (or any other convenient unit) of the latex four volumes of water are added, and the whole well stirred. The tanks, or barrels, are then covered, to keep out insects or what not during the night. The following morning the latex will be found to have risen to the surface in the form of cream. (I should have mentioned that the barrels are provided with a faucet at the bottom to admit of the separated black water being drawn off from below into a recovery tank, in case there should be any doubt about any small percentage of residual latex being contained in the black water). The black water being thus removed, the remaining latex cream is then transferred to a coagulating vessel, which for convenience on a small scale, may be a tank of wood three or four feet in length, about fourteen inches in width and eight or ten inches in depth. Such a tank will coagulate a slab of rubber in the spongy state weighing perhaps twenty-five or thirty pounds. We use to every five gallons of latex two and one half kilos of the juice of the macerated stems of the large white-flowered Ipomosa (I think, I. bona nex, syn. *Calonyction grandiflora*). If you are not familiar with the plant under this botanical name, and know it only by its common name, I may tell you that it is called in the United States the Moon Vine, and is there grown as a summer climber. It is very abundant here in tropical Mexico, and I have also seen it in Guatemala. You doubtless have it in Jamaica. In preparing this coagulating medium, I repeat we macerate the stems of the plant, diluting the juice with a quart or two of water, and straining it afterwards to remove the fibre, incorporating it thoroughly with the latex. Coagulation takes place in from half an hour to an hour, when the spongy mass can be lifted out of the tank, cut into strips of regular size, and passed back and forth between the rubber rollers of an ordinary clothes wringer. One man can put up fifty pounds of first-class rubber in this way per diem. The strips are then hung upon bamboo rods in a cool house, from which the light is excluded; and in ten days or a fortnight the rubber is ready for shipment, as per sample. We are using improved

tapping knives with pretty satisfactory results. I have for some time past devoted myself to the business of what they call in the East a "Visiting Agent," supervising rubber and other estates in Spanish America, instructing managers in tapping operations, etc., and, as opportunities occur, am gradually extending the scope of my work in this direction. If you would like to have some Castilloa seed, of good average varietal form, I should be glad to send you any reasonable quantity about the end of May when the crop is ripe. I do not think, however, that there exist in Mexico the varietal forms, or doubtful species, as alleged by some botanists to occur in Costa Rica, In other words, I think we have, on the Atlantic coast within the boundaries of this Republic, but *one* form ; and that is a good, valid species,—Castilloa Elastica. On the Pacific coast, near the Guatemalan frontier, some of the rubber planting companies state in their literature (?) that the Castilloa grown by them is an entirely distinct species, their authority being Mr. O. F. Cook, of the U.S.A. Department of Agriculture, Washington. I understand that he has set up a new species, and calls the Pacific coast form—*Castilloa lactiflua*. Some two years ago I procured some of the seed of these trees, and I now have several thousand plants growing on my estate, these being from six to ten feet high at the present time. So far, I can detect no difference whatever between these and our local plants. But when the former flower and fruit (probably about the fourth year), we shall have the material upon which Mr. Cook founded his species. Meanwhile I have no further observations to make regarding it. I would not wish it to be inferred from anything that I have said in the foregoing that we do not recognise the possibilities of improved devices and methods in the treatment of Castilloa rubber. One or two of the larger companies have already, in fact, installed centrifugal and croping machines for their output ; but in the case of any modest estate, and especially having regard to the fact that we have not got very far along in all that there is to be learned about Castilloa, the simpler provisional arrangements first mentioned answer the purpose sufficiently well, and the outlay involved is insignificant. I had at this point intended to close my letter, but a mail just in has brought me the copy of your Society's JOURNAL containing the article to which you have referred. I am obliged to say that I do not consider it very illuminating, since the crux of the matter is dismissed with the statement that : "The determination of the varietal forms referred to is a study in itself." Thus, we are no wiser than we were before. Some years ago an article, or articles, appeared in the Berlin *Tropenpflanzer* written by one Th. F. Keschny, a German resident in Costa Rica, and, if my memory is not at fault, some attempt was made therein to give these alleged varietal forms specific rank ; he divided them, I believe, into as many as four species. But I have yet to learn from an authoritative source of the existence north of Panama of any other than C. Castilloa, and, until some definite botanical distinction warranting specific rank, shall have been pointed out, we must consider this to be the *only* species,—at least, on this coast. Should you have occasion to communicate further with me in reference to rubber or other kindred subjects, I beg to say that I shall be happy at all times to do my part.—(Sgd.) J. C. HARVEY, Planter and Consulting Tropical Agriculturist.

Plantacion la Buena Ventura, Sanborn, Estado de Veracruz, Mexico.

March 31st, 1910.

OUR EXPORTS.

WE had written with great gratification of the great promise of our exports up to 31st October, intending to publish our article in the November JOURNAL. But the rainstorm in early November

changed the aspect of things considerably. Both products for export, and those products we use here, suffered much damage; nearly every product was damaged more or less; chief among these were bananas, followed by cocoa, yams, corn, peas and beans and tobacco, these all were greatly hurt; to less extent, coffee (as a whole); to a small extent only sugar-cane, coconuts and ginger.

Yet we have finished up the year ending 31st March not badly, —with increases nearly all along the line over last year, and the market prices, while not what we should like to see, have not been bad. Taking our most important product—bananas—while we have lost ground since November, we had surpassed the year before that so much that we have been able in spite of the great reduction of our weekly output since November, to keep ahead of the total of the previous year's figures, these being 14,277,309 stems, and at 31st March this year, 15,488,440.

In cocoa we sent away 57,454 cwt. against 50,606 cwt. the previous year; coffee, 90,900 cwt. against 69,275 cwt.; coconuts, 15,080,085, against 11,047,860; dyewoods, 26,820 tons, against 24,256 tons; sugar, 14,665 tons, against 6,955 tons; rum, 1,650,011 gallons, against 1,214,254 gallons; cigars, 78,800, against 71,789. Honey and wax also show substantial increases.

There were reductions in ginger; 6,601 cwts. less were exported than as at 31st March, 1909; pimento, 82,193 cwt., against 210,440 cwt.; oranges, a little over two million less; we sent away only thirty-four and a half million oranges, while in the parish of Manchester alone another hundred millions of good fruit remained on the trees.

On the whole, therefore, we are thankful to be able to write of increased output—only those millions of oranges haunt us.

COCOA.

J. H. Hart, F.L.S., formerly Superintendent of the Botanical Gardens, Trinidad, who is the author of a standard book on cacao, is now writing a series of articles on cocoa in the *West India Committee Circular*. We trust these articles will be published in book form later on, when the knowledge therein contained will be very useful to all cocoa growers.

One paragraph has struck us as very true, and one that ought to be taken to heart by all who are taking up land, whether natives or newcomers. It is as follows :—"It is perhaps unprofitable to discuss the matter with those with preconceived ideas either way; but in a work on cocoa it is necessary in order to inform the novice of the conclusions arrived at by the experienced. On entering a new country the stranger meets with many new problems, situations, propositions and troubles with which he has never before contended, and in general he will find it sound advice to 'stick to the bridge which carries you safely over,'—the bridge in this instance being well-arranged and well-tried shade, and not an untried plank which may fail to support its burden in the time of trial."

This may be applied to nearly everything besides cocoa, and not only to the newcomer, but to everyone taking up a venture new to him.

In regard to the question of shade he has further stated that while there can be no doubt whatever that in many places "Cacao is shaded more than is actually necessary, it can also be shown that in others the shade is insufficient. It has been said that the densely-shaded estate is more subject to the attack of fungus diseases than one more exposed. This, of course, is fully evident; but on the other hand, unshaded lands are more liable to attacks of insects such as the Red Spider, Thrip, Black Blight, etc., than those which are sufficiently shaded."

The point is that the question of shade has to be studied by every planter for his own locality and climate. It is evident that an estate in a deep valley where the sun comes late and goes early, will not need the shade that cocoa in an open plain would require. Again, cocoa in the lowlands would require more shade than a field of cocoa say at 1,600 or 2,000 feet elevation. At any rate, no matter the location and the elevation, young cocoa always requires shade.

CONDITION POWDERS.

THESE serve two purposes,—first they can make foodstuffs for stock more palatable by the introduction of various condiments which are pleasant to the smell and to the taste, and by serving as a medium for the administration of useful tonics and medicines generally. Just as most humans find meals more palatable through the use of salt, pepper, various sauces and so on, so the use of an attractive Condition Powder causes horses and other stock, which unlike humans are given the same food day after day without change, to eat it with more relish. For instance, in almost every Condition Powder there is Gentian, which has an aromatic odour, and is also a useful stomachic and tonic. It is not well known that next to Quinine, Gentian is the best vegetable tonic for dogs; then there is usually Aniseed, which is chiefly used to communicate an agreeable flavour and odour, but it is also a stimulant to the stomach. Then everybody knows Ginger, which is in almost every Condition Powder, has a pungent odour and taste, and is used as a useful stomachic. Not so well known is the very valuable Fenugreek,—most valuable for its aromatic, antiseptic, stimulating qualities. Along with these may be used common Salt or Sugar, also medicines like Sulphate of Iron, and Nitre, and sometimes powerful medicines like Arsenic, Strychnine, etc., for special purposes.

The body or filling of Condition Powders may be made up of nourishing material like Linseed Meal. As a rule, the ordinary proprietary Condition Powders do not contain any doses of medicines, which in even very little excess would be poisonous, like Arsenic or Strychnine; but are used, as we have said, as relishes and mild tonics.

PIGS.

WHEN pigs are kept in pens, these ought to be supplied with plenty of bedding every other day; *part of the pen should be roofed* over for protection against rain and sun—for this thatch is best. We see pigs kept in the most filthy, mucky pens, often without any bedding, and being fed among their own filth. The poor animals exist, but they do not thrive as pigs should; and when killed they are almost always full of disease.

Pigs often suffer from lice badly, and yet their owners do not know it. They see their pigs getting out of condition, not growing well in spite perhaps of stuffing with food; yet they never closely examine their pigs: first the skin for lice, second their droppings for intestinal worms, which may often infest pigs. If the skin of a pig is looked at closely, very closely, the lice may be seen running in the line of hair along the back, or behind the ears. Little white specks may be seen in the hair. and these are the nits or eggs of lice.

The treatment is to wash well with some disinfectant and water, and then dip a cloth in a mixture consisting of one part kerosine oil and two parts castor oil or any lubricating oil, and rub the pig, or wash with strong Paranaph to leave the animal somewhat sticky. In a week this has to be done again to kill the young lice hatched from the nits.

For intestinal worms, dose with one to two teaspoonfuls of Jeyes', or one tablespoonful turpentine, in three to four tablespoonfuls of castor oil according to size of pig.

PIG BATHS!

MESSRS. PARKE, DAVIS & Co., the well-known firm who advertises their Kreso-dip in this JOURNAL, write:—We are enclosing herewith a circular entitled "A Bath Tub for the Pigs," which advocates the use of a hog-wallow in the hog-lot as a sanitary measure for the protection of swine against disease.

This idea was brought to our attention by Prof. J. H. Shepard of the South Dakota Agricultural College. Professor Shepard has a herd of thoroughbred (purebred we presume is meant.—ED.) Duroc Jerseys, and he has, so he reports, kept them entirely free from disease by using one of these hog-wallows.

We believe that the proper use of a hog-wallow in which is placed a disinfectant of dip, would be the means of stopping numerous contagious diseases among hogs, and, moreover, would be the greatest preventive of the spread of hog-cholera that has been discovered. When they have used this wallow once or twice, the hogs are no longer troubled with lice or vermin, and instinct prompts them to bathe daily. This keeps them clean and healthy and is a benefit to the skin. If they drink a little of the solution, it is not injurious to them: on the contrary, it is quite a protection against intestinal worms. When you consider how greatly swine would be

benefitted thereby, and that a farmer can construct one of these hog-wallows at the small expense of about $2.80 for cement, it seems as if every hog-raiser should have one.

* * *

Just as man must have his water bath, the hen her dust baths, so the pig must have its mud bath. The roll in the wet earth is as refreshing and cooling and healthy to the pig as a plunge bath to a human. It cleans the pig's skin from scurf and parasites, and leaves it healthy,—only it must not be a filthy mud wallow but a clean one. Where pigs are confined to small pens, it is an advantage to provide clean water and add disinfectants to it for the pigs to have thei wash.

DISINFECTION IN ANTHRAX.

THE usefelness of being careful to use antiseptics on wounds or when engaged in any kind of surgery, is impressed in the following incident :—

In the course of a recent inquest on a Cumberland farmer who had died of anthrax, evidenee was forthcoming of the value of efficient disinfection as a preventive of the disease. It was shown that deceased and another farmer had together dressed the carcass of a beast belonging to the latter, which had been slaughtered in the belief that it was suffering from black quarter. Subsequent examination by a veterinary surgeon, however, showed that the animal had in fact been affected with anthrax. On learning this the owner of the animal, in his own words, "*disinfected himself with Jeyes' fluid,*" and urged his companion to do likewise ; but the latter refused. Shortly afterwards his arm began to swell, and Dr. Arnott, who was called in, diagnosed the case as one of anthrax, from which death eventually occurred. Dr. Arnott, in the course of his evidence at the inquest, expressed the opinion that "if deceased had washed with Jeyes' fluid he would possibly have been alive to-day." It may be remembered that the Chief Inspector of Factories and Workshops, in his annual report for the year 1908, quotes Professor Klein as his authority for the statement that simple immersion of horsehair in a one per cent. solution of Jeyes' special fluid for one hour at a temperature of 60 deg. Fah. was able to secure destruction of anthrax spores "in all parts of all horsehair" subjected to the process. The case referred to above certainly tends to corroborate this statement, which, of course, coming from such a quarter, requires no corroboration, and the inference to be drawn therefrom is that the observance of this simple precaution in the case of *all* material likely to be infected with the spores of anthrax, would materially diminish the risk of the dissemination of the disease through the handling of such material.

POULTRY NOTES.

LICE.—All the fowls we ever pick up have some lice, but with the dust bath they manage to keep these pests down to a minimum. It is where fowls are confined in small runs and sleep in houses that lice readily get the upper hand, if dust baths are not provided and the roosts, especially where they are let into walls, occasionally washed with Jeyes and water, and the walls white-washed. The setting hen often becomes infested with small lice, the worst kind ot all, hardest to get rid of. She should be dusted with insect powder or sulphur every week while sitting. A paste made of three parts lard, two parts sulphur, and one part kerosine should be kept in stock. A little of this dabbed on to the hen behind the neck, beneath the wings and on the rump, will keep sitting hens clean. This paste is effective also to clear the legs of fowls of that unsightly scale called "scaly leg;" it only requires to be rubbed in.

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WORMS.—Fowls suffer from worms to an extent not thought of—just as all domestic animals do. On opening a cock that had died and was sent to us for our opinion of its death, we found the liver in good order, but worms in all the other digestive organs. Half a teaspoonful of Jeyes, in a quart of water set down for the fowls will kill internal parasites, and if a remedy has to be given in the food: a teaspoonful of turpentine to every pint of meal used for making soft food, and given for three days will be effective. Then a good scour with Epsom Salts given in the water or food, a tablespoonful to a quart of water or pint of feed will clear the parasites out. Then follow with a small pinch of Sulphate of Iron given in the water for other three days, which will act as a tonic.

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SETTINGS.—We used to be always asked to make settings of odd numbers of eggs, and people used invariably to set an odd number. We note now that they do not do this to the same extent. We have always said—set any number that the hen will cover well. We must have examined thousands of nests of wild birds in our time and found all numbers of eggs. There is no reason whatever why an odd number should be preferred.

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NESTS.—Nests should preferably be set on the earth (lined with grass or hay of course), but if it is necessary to set the nests high, it is good to put in a foundation of earth hollowed like a saucer, and line with soft grass. If the weather is very dry during the incubation some water should be sprinkled round the nest during the last week. Take care to sprinkle the eggs with hottish water when the hen is off. A lazy way is to fling water over the fowl. If the weather is rainy or damp this precaution does not need to be taken. When the hen sits on the damp earth, considerable moisture arises, drawn by the heat of her body, and nature requires this moistnre to hatch the eggs properly.

YAWS OR CHICKEN POX.—At this season when chickens are in every poultry-keeper's yard, it is timely to repeat what we have often before written of the precautions necessary to prevent yaws. The disease is caused in most cases by allowing the hen and chickens to sleep among their own or other fowls' droppings. The place where the hen goes with her chickens must be clean and if it is a box or barrel, this must be cleaned every day. Whenever the eruptions are seen, put Epsom Salts in all the water the chickens have access to, and paint the pustules with Tincture of Iodine. Three or four applications should make the eruptions fall off and leave the skin clear, unless the conditions that caused the yaws are not removed, when they will keep breaking out.

KING EDWARD.

ALTHOUGH the head of a warrior nation (for no nation has done more fighting and successful fighting on sea and land than Great Britain), King Edward was a man of peace, and all his ways were the ways of a man who loved peace, yet not the ways of a man who lived to avoid taking trouble. So much trouble did he take to keep others peaceful that he is already known and will be known, as "Edward the Peace-maker."

He was always an enthusiastic farmer, an ardent sportsman and a lover of animals. When he was Prince of Wales, he kept a fine herd of Red Poll cattle at Sandringham, in Norfolk, and was a frequent prize-winner in the show-ring. With the crown he succeeded to the famous herds of Hereford and Shorthorn cattle of the late Queen Victoria. The King was a regular competitor and frequent prize-winner at Agricultural Shows and often attended them. At the Royal Show in 1905,—which the writer attended—King Edward was just beaten for the grand championship of the show by a Forfarshire farmer—both showing Shorthorn bulls, and the King was the first to congratulate the winner with a hearty shake of the hand and some good-humoured remarks. In 1905, the King presented this Island with a Hereford and a Shorthorn bull from his herds at Windsor, and the Hereford bull is still alive and useful.

All over the world people are sincere in their regret that King Edward the Peace-maker, was not spared for many years of useful influence in the world.

COMMENTS.

POSTAGE TO this office is *not* free.

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SUBSCRIPTIONS.—Will members of the Society please remember to send in their annual subscription of 4/- due in April.

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PRAEDIAL LARCENY.—Most of our Branch Societies have now appointed their authorised persons under the revised Law 4 of 1909. All these special constables will receive a small badge consisting of a small crown, which will be their distinguishing mark. These authorised persons in attending court will be paid ordinary wit-

INSTRUCTORS.—We have been advertising for two Instructors, one for the parish of St. Catherine and one for the instructural district of Hanover and Westmoreland. The applications will be submitted to the Instructors' Committee at a meeting on the 18th instant, and we hope the appointments will be made shortly after.

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BANANA DISEASE.—We published letters recently from two Jamaicans in Costa Rica and from an Englishman who is a banana planter in Nicaragua, all calling attention to the great ddstruction caused by a disease amongst bananas, which appears to be prevalent all through Central America. Owing to the close communication we have with Bocal-del-Toro and Costa Rica especially, there is some danger that this disease may be introduced here, and the Board has called the attention of the Government to the matter.

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COCONUT DISEASES.—We call attention to the articles published on coconut diseases in this JOURNAL. Agriculture is not now the easy-let-things-grow-themselves business it used to be, and just as we require to know how to deal with diseases in stock, so we now require to know how to deal with different troubles that affect our plants. Mr. Wates' article on the troubles that prevail amongst coconut trees in Portland should rouse coconut growers all through the Island to keep their trees under close observation, and whenever they notice any trees dying let us know, so that if they do not know what to do, we may be able to get them advice on the subject.

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RUBBER.—A discussion on whether Jamaica has suitable conditions to grow rubber profitably, was to have taken place at the last meeting of the Board of Management, but owing to the sitting of the Legislative Council, on which many of the members of the Board were engaged, it was postponed till May. The Legislative Council may again be sitting in May and perhaps it will be well to hold the discussion at the Half-yearly General Meeting in June. We call attention to the articles on rubber published in this JOURNAL. We have communicated with various rubber-growing countries having similar conditions to ours, and with men who have had wide experience, so as to get opinions up to date. We have already had such opinions all along since 1900, but it is interesting and useful to get latter day knowledge. A most important point is the comparison of Castilloa and Hevea contained on pages 167-170, especially the third and fourth paragraphs on page 168. Hevea has been longer and more minutely exploited than Castilloa and there is more definite information on every point regarding Hevea. Yet we have all along thought and held that Castilloa—if we have the right variety—is just as valuable.

As regards growing rubber and cocoa together, we had an article in the JOURNAL for 1906 showing that in Venezuela on a large plantation where there were 80,000 Castilloa trees, some of

them over ten years old, planted through cocoa, there had been noticed no diminution in the number of the pods carried by the cocoa trees shaded by Castilloa nor any change in the quality of the bean. These rubber trees in these years were already being tapped and the older trees produced as much as four pounds of marketable rubber each.

Then again we have testimony from Dominica, where rubber-growing amongst cocoa has been under close observation and experiment, and statistics taken. There it has been found so far, that Castilloa thrives well along with cocoa and the rubber trees do not affect the health and bearing quality of the cocoa growing beneath their shade. Hevea trees have grown well in Dominica and are tapping well, but the tapping must be done it is found early in the morning, and that is the rule everywhere. The information published shows that the conditions in Tobago and Trinidad suit Castilloa rubber admirably and they have no doubt there that good tapping results will ensue.

The article by Mr. Carvalho, who owns a property at Priestman's River in Portland and who has rubber trees growing there, and who has been for some years in Costa Rica in close touch with practical rubber results, is very valuable, because he can make a comparison between conditions in Costa Rica and in Jamaica. Actual tapping results obtained in Jamaica by 'prentice hands and not systematically are, we think, extremely promising. We heartily agree with Mr. Carvalho in all his contentions.

No man knows more about rubber in Mexico than Mr. J. C. Harvey, and we refer readers to what he says. In the next JOURNAL we shall also publish an article from Mr. Casse, the manager of a rubber plantation in Haiti and also knows conditions in Jamaica well.

There are two points brought out that we specially wish to refer to, and those are that although trees that are growing in the open may be larger than those growing in the shade, they will not yield as much rubber, and that is the great mistake that has been made. This we know from experience. In the open the latex coagulates as it runs; in the shade it flows into pans without coagulating; the more succulent bark of the shade grown trees seems to develop latex more. Then again, it is important to remember that tapping should never be done during the day, but always in the morning; this accounts for the apparent failure of many tapping trials.

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BULLETIN.—The *Bulletin* of the Department of Agriculture has been issued, but too late for extracts from it to be made in this JOURNAL. In contains most valuable matter on the tick problem, to which we hope to refer in our next issue.

* * *

PRIZE HOLDINGS.—We publish in this issue the report of the udging of the Prize Holdings Competition in Trelawny, and in next

month's issue we will publish the report for Portland. We also hope to issue a list of all the points awarded and post a copy to each competitor.

* * *

SHOWS.—We were pleased to record the success of the two Agricultural Shows held by Branch Societies in March,—Glengoffe and Bybrook. This success was continued with the Shows held in April. At Smithville on the 12th April, the first Show of the Branch there was held. This is entirely a small settlers' district, and with the exception of the Instructor, the Show was run entirely by small settlers. Mr. Hirst gave his usual efficient help in every detail,—and the little details are usually what are overlooked or neglected. Over 1,000 persons were present according to the record of the gate money at 6d. and 3d. a head, and the exhibits too were very promising: even without taking into account the scarcity of bananas, the Show of this fruit was magnificent and beat the fine show of bananas at Glengoffe. For a new district, that is, one comparatively shortly settled, the show of cocoa was also very promising. It was of course far behind Glengoffe in the number of exhibits and evenness of quality, and was not up to the Show at Mears Pen in Upper Clarendon two years ago, but both of these were much larger Shows covering much larger and longer developed districts. Only a few years ago such exhibits at small country Shows would have sent us into ecstacies—if we were given that way—but now we expect it as the natural outcome, the corollary, of the Agricultural Society's work and the steady ding-dong labour of the Instructors. It is not difficult to raise enthusiasm among small settlers: it is somewhat harder to get that enthusiasm materialised in action, and both enthusiasm and action are too apt to be temporary, ephemeral, so that it is only by steady continuity of our present policy of giving our Instructors reasonable districts, and working at the districts that respond most for all they are worth, that we can show good evidence of the Agricultural Society's work being a good investment for the country.

On the 14th April there was Christiana Show, which was quite as great a success as the first Show held two years ago; more successful in some respects, but also in some respects to the trained eye the Show was not quite so successful. However, the weather is to be blamed in respect of some of the most popular exhibits of the district. There was a good turn-out of good bunches of bananas, but not what we expected; most growers there had some big bunches, but were holding back evidently expecting such extraordinary bunches to appear that they would have had no chance. There was not such a great turn-out of ginger and sugar as at the first Show, about the same of coffee, but there was a considerable improvement in vegetables and grains; and the live stock was on the whole better, the cattle especially being in great force and of good quality.

There was a very large attendance, but hardly a large enough staff to deal with a Show of that size.

Considering the rainstorm in November, the damage done to the soil by the scouring and beating, and the dry weather following, all these Shows were successful beyond anticipation and they had all successful gates.

In spite of wet weather on the morning of the Show, the first Show of the Stewart Town Agricultural Society was very successful, yet with fine weather in the morning the gate would have been larger and the exhibits more numerous; still in both these respects the Show was quite satisfactory.

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SHOWS TO BE HELD.—Lucky Hill, at Goshen, in St. Mary, on 21st July; St. Mary Show at Nashville Common, between Richmond and Highgate on 14th July; St. George's Show at Buff Bay, on 1st August.

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BROOM CORN.—In the JOURNALS for September, 1908 and November, 1909, we called attention to Broom Corn, the head of which is used for making brooms and in the making of which there is a substantial industry in parts of the Southern States. Broom corn is of the same nature as guinea corn, it is planted the same way and grows the same way, and the seeds can be used for feeding fowls.

We can send out packets of Broom Corn at 3d. each for trial. Like Guinea Corn, it stands dry weather well and might be grown in the dry parts of St. Elizabeth. Perhaps an industry in making brooms could be worked up. It might save a large part of the importation of good brooms, as nearly all the imported brooms, such as are used for brushing carpets, are made from Broom Corn. There is no machinery needed in the making, and we think this would make a fine little industry for women and girls in the dry parts of St Elizabeth, as the making of Jippi-jappa hats can be in the more seasonable districts of the Island.

Any small settler in the plains of St. Elizabeth, can have a packet of Broom Corn free on application to the Secretary.

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FARINE.—There is abundance of cassava now ready and the demand cannot take up all that is offered. To allow it to remain in the field waiting a demand to sell it in littles, means loss of the use of much of the land, and we doubt if the increase in growth of what waits, pays interest on the loss of the field for another crop. Why therefore should not settlers lift the cassava and make farine, which they can keep in barrels and use in place of much of the cornmeal, flour and rice they usually buy. Then the field can at once be replanted to corn and beans, and Congo peas.

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INSTRUCTOR.—The Agricultural Department of British Guiana is advertising in this JOURNAL for an Agricultural Instructor; (see advertisement).

CORRESPONDENCE.

(Only letters with replies likely to be of general use are published here).

Every number of your valuable JOURNAL brings me some matter of great interest. Here is a point of interest: I have always maintained that burning off our fields of Para, Guinea or India Grass (In Colombia, River Magdalena), in order to clear the bush and rid them of ticks, is to be avoided as much as possible, in that it impoverishes the soil and only kills those ticks above ground at time of burning, whereas the females about to bring forth are in the cracks and crevicesses of the ground and escape the effects of fire. Latterly, a Colombia resident, of a highly observant turn of mind, begs to differ and holds to the diametrically opposed theory, viz., that burning off the grass and other vegetation from time to time, improves the soil and renders it infinitely more fertile. He bases his contention upon Drs. Russell and Hutchinson's experiments at Rothampsted Laboratory: "Soil heated for two hours to temperature of boiling point, will carry about double the crop grown on same soil without treatment, and the beneficial effects of heating will be apparent for four successive crops,"—in short by increasing the formation of ammonia. (See *Times*, November 12th, 1909, Weekly Edition). To me and to many others, this matter is of vital interest. I own 25,000 acres (10,000 hectares) of rich soil where above grasses grow spontaneously, but in twenty or more years of observation, I had come to the conclusion that burning was to be avoided if possible, and the machette used instead for clearing of bush, etc. You would confer a great service by ventilating this all-important subject and informing your eager readers, among whose number I figure, the result of your investigations.—I. M. VAUGHAN.

Bushmead, Bedford, 29th March, 1910.

[We shall be glad to have readers' opinions on the above points.—ED.]

BRANCH NOTES.

Trinity Ville (St. Thomas).—At the April monthly meeting of this Branch there were present: Messrs. W. A. Carr, President; B. Whitfield, Vice-president; E. S. Edwards, J. A. Bogle, R. Brown, R. Barnes, W. P. Grant, T. Kelly, Thos. McFarlane and J. T. Edman, Secretary. Mr. Nathan Campbell was also present as a visitor. The minutes of the previous meeting were read and confirmed. The Secretary reported that he had purchased one of the cocks (Black Orpington), from Mr. Briscoe, who kindly brought it over whilst on his way to Cedar Valley, for the use of members according to resolutions passed. Nine members paid in their annual subscription. On the motion of Messrs. Bogle and Whitfield, Messrs. N. Campbell and T. A. Burke were enrolled as new members. Several letters were read from Mr. Barclay, the Secretary of the parent Society, and dealt with. In regard to the labour question, it was decided to ask for a further explanation. A letter was read from Mr. J. A. Telfer. Among other things he said, that the time is opportune that the Society consider the question of a Show. A lengthy discussion followed, the President being against a Show so far as this year is concerned. It

was, however, decided to hold one during the month of December this y ear. The President and Mr. Edwards were appointed auditors of the Society's books. The Secretary stated that he intended to read a paper on "Milk as Food," but it being late he would do so at next meeting. The meeting then adjourned to the first Friday in May.—J. T. EDMAN, Secretary.

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Ocho Rios (St. Ann).—The annual general meeting of this Society was held at the Court House on Tuesday, February 17th, 1910, Rev. Geo. Nutt in the chair. The minutes of the last meeting were read and confirmed. The reports from the Secretary and Treasurer were read and accepted. The Society is still gonig ahead, although the Instructor has not been able to give his usual amount of attention during the past year. Nominations for office under the Praedial Larceny Bill were made and as soon as acceptances come in the names will in due course, be submittad for authorisation to act. The election of the Board of Management for the year 1910, took place; result as follows: President, Rev. Geo. Nutt; Vice-presidents, Messrs. A. B. Geddes, F. A. Carey, W. L. Cohen and W. H. Harrison; Secretary and Treasurer, Mr. L. C. B. Yeoman; Committee: Messrs. A. E. Mesquita, W. I. Scott, Jas. R. Corbett, C. F. Cox, Rev. F. E. Edwards, Henry Pink, Thomas Watson, E. S. Taylor and the local Instructor, Mr. E. Arnett. This closed the meeting.—L. C. B. Yeoman, Secretary.

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Portland Central (St. Margaret's Bay).—At a meeting of this Branch held at St. Margaret's Bay on Saturday, the 9th April, there were present: Rev. P. A. Conahan (in the chair), Rev. J. E. Reid, Messrs. J. M. Roper, J. O. Thompson, I. S. Williams, C. M. Harris, J. W. Napier, J. D. Brown, I. S. Roper, J. S. Morris, W. N. Patterson and others. After the minutes of the last annual meeting as well as that of the previous monthly meeting were read and confirmed, the Secretary and the Treasurer gave their reports, both of which were of a satisfactory nature. Their adoption was unanimously carried. The past year has been a working one with this Branch. Among the great amount of work done was the most successful Show held in June last. After the usual vote of thanks to the officers, the nomination of new officers followed and resulted thus:—President, Rev. P. A. Conahan; Vice-presidents, Rev. J. E. Reid, Messrs. J. M. Roper and J. H. Smith; Secretary, Mr. R. A. Henry; Treasurer, Mr. I. S. Williams. A Board of Management was thought necessary and the following were elected to constitute that Board:—The officers and Messrs. Albert Roper, W. B. Brice, O. L. Sanguinetti, J. S. Morris, W. N. Patterson, Jno. Napier, G. B. Wright, J. O. Thompson and S. Mitchell. Lengthy discussions followed on the great need of a medical practitioner for this and surrounding districts; the unsatisfactory working of the post office, which is now kept at the Railway; and the need for a better grade of road through Mt. Pleasant, Panton and Rock Hall to Fruitful Vale. The following resolution relative to the need of a medical practitioner was agreed to and the Secretary was instructed to send a copy of same to the Colonial Secretary:—"That whereas the Buff Bay district for medical purposes, extends to St. Margaret's Bay, taking in the Rock Hall and Maidstone districts, between sixteen and seventeen miles from the town of Buff Bay, thus making it almost impossible for the D.M.O. to attend except in cases of emergency and for the purposes of vaccination, etc., but never for ordinary consultation; and whereas the people in these same districts register their births and deaths at Hope Bay, the centre of other large districts; and whereas though the districts are many yet the inducements to a qualified practitioner to settle down and practise his profession are poor and as a result, doctors keep away and so many die from want of prompt attention. Be it resolved that the Government be respectfully asked to help a deserving people by making such arrangements

with Dr. A. T. Clarke as to secure his stay in the district that has suffered to long in the past." Matters relative to the roads and the post office were left to a Committee consisting of the President, Rev. J. E. Reid, Mr. J. M. Roper and the Secretary, to consider.—The meeting then adjourned—R. A. HENRY, Secretary.

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Porus (Manchester).—The usual monthly meeting of this Branch was held in the Church of England Schoolroom on March 7th, 1910. At roll-call nineteen members answered to their names. The minutes of last meeting were read and confirmed. S. A. Hendricks, Esq., moved a vote of sympathy to our Instructor, Mr. J. T. Palache—who was absent owing to an accident—which was unanimously agreed to and the Secretary was instructed to forward same to him. Arising out of the minutes was the matter of the samples of the meals of breadfruit, plantain, banana, cassava (meal and starch), which were asked for by Mr. Oates, of the Banana Farm Products Company of Canada, as were shown at the Porus Agricultural Show. A discussion followed. It was suggested and agreed to that any member present could prepare the samples and hand them to the Secretary, and the best would be selected. A letter from Mr. Cradwick *re* co-operation in exbibits for the Woodstock Show was read, and it was suggested that the matter be left over until we heard further from him, which was agreed to. Mr. D. Francis spoke on the great necessity for a resident doctor for this district, and that in consequence of illness an agriculturist could not look after his plantation, and for the want of a resident D.M.O., one would almost die for help and to get help one would have to travel ten or more miles. The feeling of the meeting was in sympathy with the suggestion. A suggestion of proper machinery and barbicues for the curing of coffee was brought up by the President, showing the requirement for helping to produce good coffee, which was agreed to by members who are willing to make a start. Mr. W. E. Robertson suggested that if this scheme is to work satisfactorily it should be registered. It was further suggested by the President that as we did not have a full house we should defer it and call a public meeting, and if the members do not feel that they can carry it through, we would ask for shareholders outside. It was agreed to that notices be sent to the Churches of the various districts informing them of our intention. A partial appointment of special constables on praedial larceny had commenced and would be brought up for decision at next meeting. There being no other business, the meeting was brought to a close until the 4th of April.—C. ROWLAND, Secretary.

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The regular monthly meeting of the above named Branch was held in the Church of England Schoolroom on Monday, 4th April, 1910. Before the business of the meeting began, Mr. Hendricks, Vice-president, moved a vote of sympathy for Mr. J. T. Palache *re* his late accident and illness. The members all stood as a mark of recognition. Mr. Palache replied in suitable terms The minutes of the last meeting were read and confirmed. The Instructor asked to be allowed to give his address ere it got too late. In his opening remarks be said that he was glad that this Society had taken up the matter of the coffee industry. His paper was on Thrift and was very lengthy and interesting. It was moved by Mr. W. E. Robertson, and seconded by Mr. W. A. Morgan, that the paper of the Instructor be put in print in the JOURNAL and daily papers, which was agreed to. A vote of thanks was moved by Mr. W. E. Robertson and seconded by Rev. Esson and unanimously agreed to. Correspondence was read from the Instructor and one from Mr. Fursdon *re* the Railway tariff. After a lengthy discussion, a resolution was put forward and agreed to—"That as the Railway belongs to the Island, that it should run to the interest of the taxpayers and not as a direct paying factor." It was further thought

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It was moved by Rev. Esson and seconded by Mr. W. E. Robertson, that the coffee scheme be postponed until Monday, 18th May, and that notices be sent to the Churches and circulars to individuals, which was agreed to. It was decided that Messrs. Thomas and Blagrove draw up the petition *re* the road and bridge leading to the St. Toolis district by way of the Baptism Fording. This brought the business of the evening to a close.—C. ROWLAND, Secretary.

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A public meeting in connection with the above named Branch, was held in the Church of England Schoolroom on Monday, 18th April, 1910 Among those who were present were the President, Rev. W. B. Esson, S. A. Hendricks, Esq., J.P., M.P.B., the Instructor. J. T. Palache, Esq., the Secretary, C. Rowland and several other gentlemen, who met for the purpose of discussion of the subject and to get a concensus of opinion *re* a Central Factory for the proper manufacturing of coffee. The President opened the meeting by introducing the scheme, and asked Mr. Hendricks to give an outline of the coffee industry and the benefit that would be derived from a central factory, which he did in a brief way. Mr. Palache was asked to give his views. On rising he said, he was glad to be present and hoped he would be able to give some assistance and that this Society will be a pioneer in the centralising of coffee. He further urged co-operation in the coffee industry; which could never be a paying concern worked as at present. He said if we prepare coffee like that of Mr. Morgan's, which won the *Telegraph's* prize and that also at the Porus Show, we could demand a good price, and all that is wanted is proper fidelity in one another, and he hoped the day would come when he would see the factory put up and commence work. He again referred to Switzerland and its independence through co-operation, and, in his opinion, if we only put aside lukewarmness we would succeed; and that we must go about it talking, talking, thinking, thinking, and then act. He said that Jamaica coffee is being bought and put with other countries' coffee of less quality in order to give the aroma. Mr. Thomas said it is a need that we greatly feel and that we want co-operation, and that many good fields have been thrown up for want of money; he further impressed the necessity of a Loan Bank. Mr. Robertson also spoke in favour of the factory and said that we go on with it at once. Mr. Morgan and several others expressed their opinion that we go on with the scheme of the factory at once, whilst a few others said that we go on with the loan bank first. Mr. Reddish said he would like the people to understand that the co-operation was not going to guarantee any high price but would try to get the possible highest price. After some criticism by Mr. L. Daley, the Instructor showed where a co-operative body failed, it was those that left things in one man's hands. The Vice-president said that every one should look on this scheme with a broad mind and it might be the means of hampering the middle man. A resolution was put and carried that we organise the Society and by the name of the "Porus Co-operative Association." The Instructor further added that we have the loan bank also. The President asked if it was the desire of the friends present that one united effort be put forward for the betterment of the town, when the reply was given as one voice—yes, with the exception of a few who did not vote but were not against the scheme. After a lengthy discussion the following Committee was formed:—Rev. W. B. Esson, President, S. A. Hendricks, Esq., Vice-president, the Instructor, J. T. Palache, Esq., Messrs. L. Hylton, W. A. Morgan, W. E. Robertson, W. T. McPherson, S. H. Blagrove, H. Loftman, B. Short, and Secretaries Rowland and Reddish.—five to form a quorum. A vote of thanks was moved by Rev. Esson and seconded by W. E. Robertson to the Instructor, which was agreed to. A vote of thanks for the use of the building, was moved and seconded by Messrs. S. H. Blagrove and W. A. Morgan, to the pastor, Rev. J. R. M. Cass and to Committee. At the close of the meeting a Committee meeting was convened and arranged for

the next meeting, two weeks from date at five p.m, This brought an enjoyable evening to its close.—C. ROWLAND, Secretary.

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Lamb's River (Westmoreland).—The quarterly meeting of this Branch was held in the Mt. Hermon Schoolroom on Friday, 8th April. Present: Rev. T. B. Prentice, President; fifteen members and Messrs. T. Johnson and Wiggan, visitors. The minutes of the previous meeting were read and confirmed. The names of those members who won prizes at the Montpelier Show, held on the 3rd March, were read out as follows:—Alphaeus McIntosh (small settler), first prizes for brood mare and stallion, together with champion prize—silver medal; George Warburton, first prize for leaf tobacco and one dozen ears of corn: A. Brown, first prize for arrowroot starch; S. Groskopf and C. F. Wedemire, first and second prizes respectively for cured ginger; Edward Graham, first prize for cocoa bean, half-prize money for cocoa pods, second prize for "hard yams," and third prize for grapefruit; J. E. Lawrence, third prize for leaf tobacco: James Gallimore, third prize for corn; and U. L. Brown, third prize for sweet potatoes. General satisfaction was expressed at the success of the Society in this matter. The President read a letter from Mr. Barclay *re* Anglo-Nubian goat (ram). After a full and open discussion, the Society decided to purchase the goat. Mr. G. Warburton agreed to keep it for three months, after that Mr. C. K. Chambers of Hopewell, will keep it for three months, and so on. Service fee: one shilling to members of the Society, and outsiders, one shilling and sixpence. One-half the service fee goes to the keeper of the goat, and the other to the Society. A list of those who use the goat to be kept. A letter from Mr. Barclay to the Secretary was read *re* influenza amongst horses, in which some remedies were recommended. It was agreed to ask Mr. G. R. C. Heale to give a paper on some of the most common diseases amongst horses at the next meeting. A discussion to follow the paper. The President read a letter from Mr. Barclay *re* Prize Holdings Scheme, in which the conditions were fully explained A letter from Mr. Cradwick, Agricultural Instructor, was read *re* Show to be held at Woodstock, by the St. George's Branch on the 1st August. After discussion the Society was of opinion that it is not practicable for it to take part in this Show. A letter from Mr. C. A. T. Fursdon was read *re* policy of Railway as affecting agriculture. It was the general feeling of the meeting that as we use the Railway so little it is scarcely worth while to discuss this matter. The following were proposed and duly elected members of the Society: Messrs. T. Johnson, Alphaeus McIntosh and W. Wiggan, the postal address of each being Lamb's River. Meeting adjourned till Friday, 8th July.—U. L. BROWN, Secretary.

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Central St. Mary (Eliot).—The usual monthly meeting of this Branch took place at Eliot on March 10th 1910. Mr. J. A. Banks, President, nine other members, Miss A. Williams, Mrs. A. Taylor and many other visitors. There was present also the Rev. H. B. Walcott, who visited the Society to give a lecture on gardening. The minutes of the last meeting were read and confirmed. The following were elected members of the Branch: Messrs. W. D. Douglas and A. B. Aucherd. The business arising from the minutes was dealt with. The Secretary reported that he had issued circulars to the gentlemen around asking or inviting them to attend the meetings and become members of the Branch. In welcoming the lecturer the President expressed the Society's appreciation of the visit and hoped that in the future the Society will always be privileged with such visits. The rev. gentleman was very interesting in his preliminary remarks, and though his lecture lasted for much more than one hour, the same interest was kept up to the end. His subject was "Gardening for Pleasure and Profit," and it was really a pleasure to listen to that gentleman—to say nothing of the "profit" derived. The President, in moving a vote of

thanks, which was seconded by the Rev. C. A. Wilson, said it would be of great gain to the Society if the rev. gentleman would favour us with other such lectures on subjects as important as the one dealt with. The lecturer responded suitably, promising that on his next visit he would give a lecture on "Fowls." The meeting then adjourned for the second Thursday in April, which will be our annual meeting.—E. A. GUNTER, Secretary.

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Central Cornwall (St. James).—A regular meeting of this Branch was held at Mount Reece on Friday, 25th March. There were present: Mr. J. H. Oliphant, Vice-president, in the chair; Mr. E. S. Jarrett, Secretary, seven other members and many visitors. The minutes of the previous meeting were read and confirmed. It was moved by Mr. Kerr, seconded by Mr. Henderson and unanimously agreed upon by the meeting, that a letter of condolence be sent to the relatives of Mr. John Wallace, who died in December last. Mr. Henderson gave a report on the resolution sent through him to the Montpelier Show Committee *re* their using the name of this Society in connection with the Show without permission. With regard to the circular letter sent out soliciting the co-operation of gentlemen around by inviting them to become members of the Branch, the following gentlemen: Messrs. Thomas Jackson, Henry Anglin, Joseph Buchanan responded and subsequently became members of the Branch. It was decided that the young ladies taught hat-making in connection with this Branch, be communicated with to find out if they would submit themselves to a competition in the making of hats. After a very lengthy discussion on the present condition of the discharged tenants on Ducketts and other properties, now sold to a certain Fruit Corporation, it was agreed that the Government be approached on the matter of the sale of crown lands adjacent to these properties. In view of this the following resolution was moved: "Resolved—That in view of the surrounding properties—Ducketts, Spring, Seven Rivers and Chesterfield (St. James), having been recently sold to a certain Fruit Corporation, and thereby causing several hundreds of tenants, who are solely dependent on agriculture for a livelihood, to be in dire need of lands on which to settle to prevent their imigration, this Society respectfully beg to approach the Legislative Council with a view that immediate steps be taken to open up the sale of crown lands at New Bethel, Mocho and Jericho, in the parish of St. James." It was further decided that a petition signed by the abovementioned tenants, be also sent to the Government on the same matter. A Committee consisting of Rev. J. A. McIntosh, Messrs. Arnold R. Atkinson, Henderson, Stephenson, Kerr, Plummer, and Kamaka, was appointed to draw up the petition. The Rev. J. A. McIntosh is to act as Chairman. The meeting adjourned till 22nd April.—E. S. JARRETT, Secretary.

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Grand Cayman.—We are glad to publish the st[illegible] [illegible]ow accounts as follows:—Income—By balance brought for[illegible] [illegible] 8½d.; Government Grant, £20; Annual Subscription (83 mem[illegible]), [illegible] 3s.; Receipts from Annual Show, £2 13s. 2d.; Interest on Dep[illegible] [illegible] Savings Bank, 1s. 2¾d.; Amount owing by Parent Society, 20 per cent. of Prize Money, £2 2s.—total—£49 1s. 1½d. Expenditure—By purchase of Bull, "Cayman," £15; Freight, Duty and other charges, £2 17s. 7½d.; Keep of Bull for 20 weeks at 1s. per week to April 5, 1910, £1; Purchase of two Cockerels, £1 1s.; Purchase of Vegetable Seeds, £1 15s 6½d.; Affiliation Fees for 1908 and 1910, 10s.; Expenses and Prize Money of Show on December 21st, 1909, £13 3s. 1½d.; Stationery, Postage, Freight, Duty, etc., £1 11s. 7d.; Balance in Government Savings Bank (including 1/2¾ interest; £9 16s. 2¾d.; Cash and Stamps in Treasurer's hands, 4s.; Amount owing by parent Society, £2 2s.—Total—£49 1s. 1½d.